COMPUTER SCIENCE AND ENGINEERING

101. Files of Windows operating system are stored in the following folder :
(1) Administrative Tools (2) Program Files
(3) Control Panel (4) system32

102. The following is not a process state
(1) Ready (2) Communicating
(3) Running (4) Blocked

103. A process is
(1) a subset of associated threads (2) a super set of associated threads
(3) totally independent of threads (4) a hardware feature

104. Internal fragmentation results when
(1) segmented memory management is used
(2) paged memory management is used
(3) cache management is used
(4) RAID disks are used

105. In segmented memory management, the physical address is computed by
(1) adding base address of a code segment to the offset of the data segment
(2) adding all logical addresses
(3) adding segment offset to the segment base address
(4) accessing free space list

106. Elevator algorithm is used in
(1) CPU scheduling (2) deadlock prevention
(3) disk scheduling (4) cache management

107. The following is not an operating system service :
(1) program execution (2) controlling I/O devices
(3) user interface (4) debugging

108. All modern operating systems are
(1) multi threading (2) open source
(3) single user (4) cloud based

109. Configuration information in Windows operating system is located in
(1) .sys file (2) CMOS memory
(3) track 0 of the hard disk (4) the registry

110. The following is not a DBMS
(1) DB2 (2) WebSphere (3) MySQL (4) Oracle

111. In a relational table, the primary key
(1) can not be a composite key (2) can not be the super key
(3) is one of the candidate keys (4) can have null value

112. A relation where there is no partial dependency of any column on the primary key is in
(1) 4th and higher normal forms only
(2) only in 3rd normal form
(3) 1st normal form and 2nd normal form only
(4) 2nd and higher normal forms

113. When an E-R model is converted to a relational database,
(1) Entities become tables and Relationships become fields.
(2) Entities become fields and Relationships become tables.
(3) Both Entities and Relationships become tables.
(4) Entities become tables and Relationships become keys.

114. In a database table containing non-atomic fields is
(1) not even in 1st normal form
(2) in 1st normal form, but not in higher normal forms
(3) in 2nd normal form
(4) in 3rd normal form but not in 2nd normal form

115. In DBMS, a 'view' can be considered as
(1) a virtual table
(2) a virtual database
(3) a table without records
(4) a fully normalized table

116. In DBMS, to create a new column in a table, we have to use
(1) DML (2) DCL (3) DDL (4) TCL

117. A database table named 'person' has the fields {name, sex, age, weight}, where name is any string, sex is (male, female), age between 1-100, weight between 1-100.
What is the output generated by the SQL statement :
SELECT COUNT (*) FROM person WHERE age < 10 group by sex
(1) one positive number
(2) a table containing the details of all persons less than 10 years age
(3) a table containing two values
(4) a table containing ages and sex of all persons less than 10 years age

118. There are two database tables. The first one is 'subject' containing the fields (subject_ID, subject_name, marks, student_ID). The second one is 'student' containing the fields (ID, name). Find the SQL statement which gives the marks of Radhika in the subject DBMS.
(1) SELECT marks FROM subject.marks WHERE student.name = "Radhika" and subject_name = "DBMS"
(2) SELECT subject.marks FROM subject WHERE subject.ID = student.ID and student.name = "Radhika" and subject_ID = "DBMS"
(3) SELECT marks FROM subject WHERE student.student_ID = student.ID and student.name = "Radhika" and subject_name = "DBMS"
(4) SELECT subject.marks FROM subject and student WHERE ID = student.ID and name = "Radhika" and subject_name = "DBMS"

119. The following operator is not supported in PL/SQL :
(1) ** (2) % (3) <> (4) ||

120. The following statement is true in OOP :
(1) A program contains zero or more objects.
(2) In a well-written program, every object must define friend functions.
(3) A class is instantiated from its object.
(4) The objects interact by passing messages.

121. Which of the following statements is false ?
(1) A destructor cannot pass parameters.
(2) A constructor must always be used along with a destructor.
(3) A constructor is a member function.
(4) A destructor can be either public or private.

122. In C++, cin is
(1) a method
(2) an object
(3) an operator
(4) a predefined function

123. The output of the following C++ code
```
for (int a = 0; a < 10; a++) {
    cout <<++a;
}
```
(1) 0 1 2 3 4 5 6 7 8 9
(2) 1 3 5 7 9
(3) 0 2 4 6 8 10
(4) 1 2 3 4 5 6 7 8 9 10 11

124. In C++, the following operator is used to call object destructor :
(1) delete (2) deallocate (3) destroy (4) destruct

125. In C++, overloaded functions must differ in
(1) return type
(2) number of parameters passed
(3) types of parameters passed
(4) either number or types of parameters

126. An abstract class must contain
(1) only pure virtual functions
(2) any virtual function
(3) at least one pure virtual function
(4) at least one virtual function

127. Correct the following C++ code
int *a,c = 10; cin >> a; c = c – a; cout << c;
(1) int *a,c = 10; cin >> &a; c = c – &a; cout << c;
(2) int *a,c = 10; cin >> a; c = &c – a; cout << c;
(3) int *a,c = 10; cin >> *a; c = c – *a; cout << c;
(4) int *a,c = 10; cin >> a; *c = *c – &a; cout << *c;

128. If some private data in class A is to be accessed by class B, then
(1) A must be made a sub class of B.
(2) A must declare B as a friend.
(3) B must be made a sub class of A.
(4) B must declare A as a friend.

129. In C++, if the variable 'a' is declared as 'protected' in class X, then apart from the methods of class X
(1) all friend classes of X can access it.
(2) any class where protected data is declared can access it.
(3) all sub classes of X can access it.
(4) only immediate sub class of X can access it.

130. Byte code is executed by
(1) JVM (2) Javac (3) JSP (4) Operating system

131. The base class of all objects in java is called
(1) Object (2) Class (3) System (4) Jdk

132. An applet runs in
(1) web browser (2) web server
(3) Microsoft windows (4) java server pages

133. Which of the following statements is true ?
(1) JDK contains JRE; and JRE contains JVM.
(2) JRE contains JDK and JVM.
(3) JVM contains JDK; and JDK contains JRE.
(4) JDK, JRE and JVM are totally independent.

134. Given below some defective java code that doesn't compile :

```
public class myproblem {
    public int compute(int x)
    {
      int a = x * x;
      return a;
    }
    public static void main(String []args)
    {
      compute myfunction = new compute();
      System.out.println(myfunction.compute(3));
    }
}
```

Do the following to correct the above code
(1) make 'compute' private
(2) insert line 'friend compute()' in the beginning of main
(3) replace 'new compute' by 'new myfunction'
(4) replace all occurrences of 'compute' by 'myproblem' in the 1st line of main

135. A java interface is
(1) an abstract class (2) not a class
(3) a package (4) a collection of implementation code

136. In java, a 'try' block
(1) is followed by a single 'catch' block only
(2) is always followed by a 'finally' block
(3) is followed by one or more 'catch' blocks
(4) is never followed by a 'finally' block

137. The following is not a predefined class in java :
(1) String (2) Hashtable (3) Object (4) std

138. The following is not true in case of java references :
(1) Java references are used to access objects.
(2) Arithmetic cannot be performed on java references.
(3) A reference cannot be cast to a different type.
(4) A java reference variable can be used to refer another reference variable.

139. Overloading operators in java
(1) is performed by using a special function.
(2) is not possible.
(3) is allowed only for the operators '*', '>>' and '<<'.
(4) is easier than in C++.

140. On the internet, servers are located
(1) in developed countries (2) in USA
(3) anywhere (4) in major cities

141. A domain name is converted to IP address by
(1) DNS (2) FTP (3) www (4) DHCP

142. The following protects a private network from unauthorized access :
(1) Firewall (2) Firewire (3) https (4) zip

143. HTML uses the entity & nbsp; to insert the following in the displayed text :
(1) newline (2) backspace
(3) space (4) new black screen pointer

144. The following is not a self-closing tag in HTML :
(1)
 (2) <col> (3) <img> (4)

145. The following statement declares an array with 10 elements in VBscript
(1) Dim words[10] (2) dim words(9)
(3) dim words(10) (4) Dim words(9)

146. Any statement that starts with the following is treated as a comment in VBscript
(1) a slash (2) a slash followed by an asterisk
(3) a double quote (4) a single quote

147. The output of the following code :

```
i = 16
Do Until i < 15
   i = i – 2
   response.write(i & " <br/> ")
Loop
```

(1) 13 (2) 14 (3) 15 (4) blank

148. In ASP, to move to the next record in a Recordset object, we use the method
(1) NextMove (2) Loop (3) Next (4) MoveNext

149. To access an ASP server component, first we have to
(1) compile it (2) export the object
(3) edit the component (4) create an object of it

150. Which of the following statements are true ?
I. Shift registers are combinational circuits.
II. Flip-flops are sequential circuits.
III. Counters are sequential circuits.
(1) All (2) I and III (3) I and II (4) II and III

151. What logic gate is produced if an inverter is added to each of the three inputs of an OR gate ?
(1) A NAND gate (2) An AND gate
(3) An XNOR gate (4) A NOR gate

152. The Boolean expression C + ABC' is equivalent to
(1) A'C + AB + AB'C (2) A'B + AC + A'BC
(3) B'C + BC' + ABC' (4) AC' + B'C' + ABC

153.

1		1	
		1	

The Boolean expression corresponding to the above K-map is
(1) Σ m (0, 2, 6) (2) Σ m (2, 4, 5, 6, 8)
(3) Σ m (0, 3, 7) (4) Σ m (1, 2, 6)

154.

X	Y	Output
0	0	A
0	1	B
1	0	C
1	1	D

The above truth table represents
(1) a decoder (2) a de-multiplexer
(3) a multiplexer (4) an encoder

155. The following type of memory requires periodic refreshing :
(1) Solid state disk (2) Magnetic disk
(3) ROM (4) Dynamic RAM

156. The number of flip-flops required to construct a divide-by-5 counter
(1) 5 (2) 32 (3) 25 (4) 3

157. Minimum power dissipation is achieved in the following logic family :
(1) TTL (2) CMOS (3) ECL (4) RTL

158. 8086 microprocessor was developed in the following time period :
(1) 1960 - 1969 (2) 1970 - 1979 (3) 1980 - 1989 (4) 1990 - 1999

159. How many interrupt pins 8086 has got ?
(1) 0 (2) 4 (3) 1 (4) 2

160. The length of instruction queue in 8086 is
(1) 6 bytes (2) 6 bits (3) 6 instructions (4) 6 words

161. In 8086, a data segment can start at physical address
(1) 0 × 59804 (2) 0 × 00002
(3) 0 × 440D0 (4) 0 × 580A90

162. The size of IP register in 8086 is
(1) 16 bit (2) 20 bit (3) 30 bit (4) 32 bit

163. Data is given within the instruction in
(1) Direct addressing mode (2) Immediate addressing mode
(3) Indexed addressing mode (4) Indirect addressing mode

164. Size of the shortest instruction in 8086
(1) 1 byte (2) 2 bytes (3) 4 bytes (4) 8 bytes

165. The minimum mode is selected in 8086 by applying logic 1 to the following pin :
(1) BHE (2) MN/$\overline{MX}$ (3) READY (4) NMI

166. The size of directly addressable memory for 80486 is
(1) 32 GB (2) 4 GB (3) 4 MB (4) 20 MB

167. On-chip memory management unit was first introduced in
(1) 8086 (2) 80286 (3) 80386 (4) 80486

168. The waveform of the microprocessor clock is
(1) sine wave (2) square wave
(3) triangular wave (4) sawtooth wave

169. The mantissa in a floating point number is always
(1) greater than 1 (2) less than 1
(3) equal to 1 (4) equal to 0

170. Generally CPU instruction sets do not have the following type of data transfer instruction
(1) register to register (2) register to memory
(3) I/O to register (4) memory to memory

171. In register indirect addressing mode, the data is present in a location whose addres
(1) the instruction pointer (2) the instruction
(3) a designated register (4) stack pointer register

172. A computer has 1 GB of main memory with an access time of 100 ns and 128 KB of cache with an access time of 10 ns. What is the average access time, if the hit ratio is 95% ?

(1) 12.8 ns (2) 14.5 ns (3) 95.5 ns (4) 4.5 ns

173. In principle, the maximum number of interrupting devices a computer system can handle is

(1) one (2) eight (3) thirty two (4) unlimited

174. DMA transfer is preferable, compared to programmed I/O, if

(1) the I/O device is fast and the data to be transferred is large.
(2) the I/O device is slow and the data to be transferred is large.
(3) the I/O device is slow and the data to be transferred is small.
(4) the I/O device is fast and the data to be transferred is small.

175. Cost per bit of memory is cheapest in

(1) Main memory (2) Magnetic disk
(3) Cache memory (4) Pen drive

176. Average access time of virtual memory is

(1) less than that of cache
(2) greater than secondary storage
(3) greater than cache and less than main memory
(4) greater than main memory and less than secondary storage

177. The following parts of the CPU are definitely required to execute an instruction

(1) Control unit and ALU (2) ALU and zero or more registers
(3) Control unit (4) Control unit, ALU and registers

178. A C compiler reserves the following amount of storage for an integer variable :

(1) 4 bytes (2) 2 bytes (3) 2^{16} bits (4) 8 bytes

179. A linked list is

(1) a linear data structure
(2) a non linear data structure
(3) neither a linear nor a non linear data structure
(4) an array of pointers

180. Every C string is terminated by

(1) eoln (2) eof (3) null (4) –1

181. When using binary search to search a list of N items, the number of comparisons are

(1) at most 2^N (2) at best 1
(3) 2N (4) $\log_{10}N$ in the worst case

182. Consider the following unsorted data :
67 33 6 23 10 500 53
After one pass of bubble sort algorithm, the data would become
(1) 67 33 23 6 10 53 500
(2) 33 67 6 23 10 500 53
(3) 33 6 23 10 500 53 67
(4) 33 6 23 10 67 53 500

183. Consider the C code
```
int b, a = 10;
main() {
        b = b + a++---a;
        print("%d\n", b);
}
```
The output is
(1) 0 (2) 10 (3) 11 (4) 9

184. Consider the C code
d = 12 + 6/3 –1;
The value of d is
(1) 9 (2) 5 (3) 15 (4) 13

185. The maximum number of nodes that can be accommodated in a binary tree of height 'h' is
(1) $2^{h+1} + 1$ (2) $\log_2(h + 1)$ (3) $2^{h+1} - 1$ (4) $2^{h-1} - 1$

186. The following is the best data structure to implement a queue :
(1) binary tree (2) linked list
(3) circular list (4) binary search tree

187. Consider the C code
```
int compute(int b, int a) {a = 0; b = 0; return a;}
main() {
int a = 10;
int b = 20;
compute(a, b);
printf("%d%d\n", a,b);
}
```
What is the output ?
(1) 0 0 (2) 0 20 (3) 10 0 (4) 10 20

188. In OSI reference model, the layer immediately below Application layer is
(1) Presentation layer (2) Data link layer
(3) Session layer (4) Transport layer

189. A coaxial cable contains
(1) an inner core surrounded by an insulator that is grounded.
(2) an inner core that acts as ground and an outer sheath carrying signal.
(3) two conductors carrying two different signals.
(4) an outer sheath that is grounded and surrounded by insulation.

190. A layer 1 switch is same as
(1) a network hub (2) a network switch
(3) a network router (4) RJ45

191. A class C network can have a maximum of
(1) 127 computers (2) 255 computers
(3) 65535 computers (4) 16777215 computers

192. A protocol to remotely operate a computer is
(1) Skype (2) Telnet (3) SMPT (4) DHCP

193. Two optical fibers can be joined by using
(1) a soldering gun (2) a network bridge
(3) splicing (4) welding

194. The following is a collision-free protocol
(1) CSMA (2) Slotted Aloha
(3) Token Bus (4) CSMA/CD

195. HTTP is
(1) a protocol (2) a web server
(3) a scripting language (4) a pointer to a web page

196. What is the subnet mask that corresponds to a subnet with 5 computers ?
(1) 0.0.0.5 (2) 255.255.255.8
(3) 255.255.255.248 (4) 8.255.255.255

197. The following network topology requires exactly N-1 links to connect N computers :
(1) Ring (2) Bus (3) Star (4) tree

198. A deadlock occurs when
(1) resource conflicts take place (2) a program has large execution time.
(3) there are voltage spikes. (4) too many functions are used.

199. The size of virtual memory is limited by the size of
(1) hard disk (2) main memory (3) cache (4) ROM

200. Ready queue contains
(1) I/O devices (2) programs (3) processes (4) hardware pin